

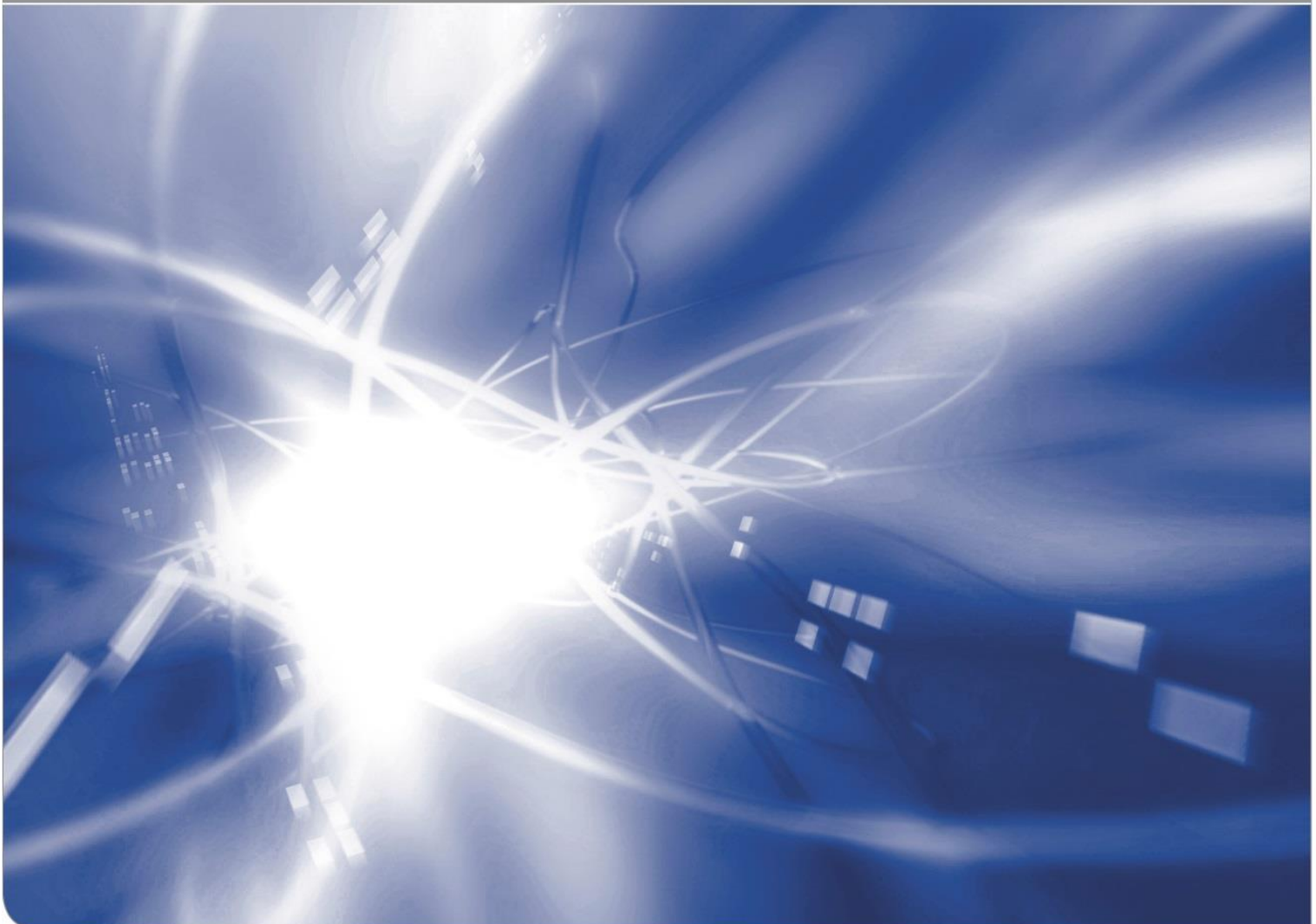
Growing a Start-up into an Established Company

Case Study #1

The Evolution of the New Technology-Based Venture RESTUBE

by Ralph Henn¹, Hendrik Niermann

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Ralph Henn and Hendrik Niermann

Abstract

Having a scalable business model is a goal that plays a major role for start-ups and new technology-based ventures (Kollmann et al. 2016). Company growth in general is resulting out of the interactions between various factors, located inside and outside a business (Jünger 2008). During the process of growth upcoming troubles and challenges are as diverse as the ways in which growth can be achieved (Kummer et al. 2016). Reality shows that in addition to successful former start-ups such as AirBnB (Rachleff and Rosenthal 2013), there are a considerable number of young companies which are unable to establish themselves in the market and fail to increase their operations (Lussier and Corman 1996, Song et al. 2008, Bogott et al. 2017).

The following case study examines the evolution of the new technology-based venture RESTUBE right from the formation up to an established company. It specifically explores the influence of the surrounding entrepreneurial ecosystem on this process as well as the founders' role transformation during in the growth process. Therefore, in the first place an intensive expert interview with Christopher Fuhrhop, one of the founders of RESTUBE, was conducted (Fuhrhop 2018). The history of the company RESTUBE is prepared as a success example for entrepreneurial activity and its challenges. It is used to show the complex relationships regarding a young business as well as the influences during the evolutionary process in order to indicate results that can be transferred to companies in similar context (Mayring 2001, Yin 2014). The transcription of the expert interview and the associated audio file are available at the Institute for Entrepreneurship, Technology-Management and Innovation (EnTechnon) at the Karlsruhe Institute of Technology (KIT).

In the case study below the product innovation, the target market, the organizational characteristics of RESTUBE, the company culture and the external support are analysed. Furthermore, the entrepreneurial team, the role of the founder and the problems and crisis during the growth process are illustrated. The findings of the case study underline the high impact of the entrepreneurial environment on the local start-up success as well as the complexity of the ecosystem determinants (Suresh and Ramsej 2012). Based on the qualitative analysis, the results indicate that the role of the founder is shifting over time as well as the focus and priorities are changing.

Methodically, the case study is based on the guidelines of Yin (2014) as well as Dul and Hak (2008). Furthermore, the practical structure is influenced by similar case studies, such as Rachleff and Rosenthal (2013), Rau (2007), Runge (2014) and Wohlfeil (2015).

Keywords: entrepreneurship, growth, start-up activity, entrepreneurial ecosystem, case study, success story, entrepreneurial leadership, product innovation

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1. Company

The new technology-based venture RESTUBE is a nowadays established company located in the region around Karlsruhe, Germany. It was founded in 2012 by two water sports affine student entrepreneurs from the Karlsruhe Institute of Technology (Janz 2014). The mechanical engineering graduates set themselves the goal of developing a "helmet for water sports" (Schweiger 2016).

1.1 Product innovation

The product (see figure 1) called "Restube" is a small safety system consisting of a pocket containing a folded buoy that can be worn around the waist or on the harness (Restube 2019). An energetic pull on the trigger will cause the buoy to inflate so the person in the water is able to hang on to it and stay afloat. Waving with the long yellow buoy, the user can make him visible. He can drag the buoy behind him to swim fast also after he triggered, or help other by handing over the buoy. With its compact design and all these options to use, Restube is the most versatile and wearable safety tool for water activities existing. However, it is important to emphasize that the Restube can't replace a classic lifejacket, because it only works if the wearer is conscious. It does not match the standards for swimming aids, as it is not body worn. Like any disruptive type of product without created standards, it is allowed to sell such a product as long it is in conformity to the local product safety laws, as well as a clear documentation of a risk analysis. For avalanche backpacks it took for example 25 years until there came up an own standard (Fuhrhop 2018). Nowadays, the Restube is officially an additional backup which provides more safety for all activities on and in the water.

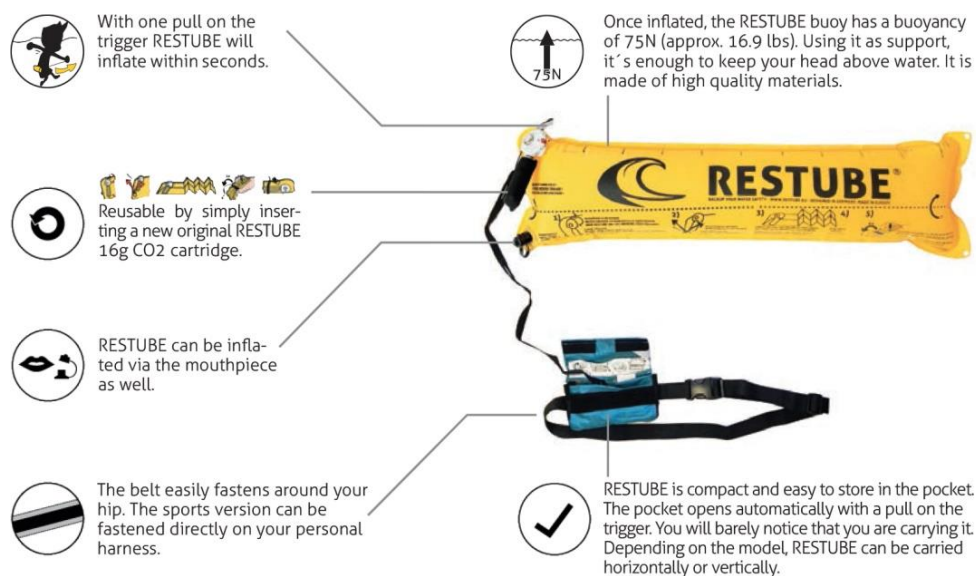


Figure 1: Features of the Restube (RESTUBE 2019)

Depending on the variant, the bag can be worn horizontally or vertically and thus can be adapted to every person's needs. A vertical attachment reduces the drag while swimming to a minimum. In addition to the basic Restube, a whistle and a small key pocket are integrated into the bag as additional extras. The key feature to this small security system is the buoy. When inflated, it has an uplift of 75N, enough to keep the person's head safely above water.

The buoy is made of a material that meets the requirements of the rescue vest standard DIN EN ISO 12402, so ensuring longevity. All RESTUBE products are reusable by simply replacing the gas cartridge. The buoy can also be inflated at any time by blowing it up. After using the buoy once, it can be folded up and stowed in the bag and is ready to be used again.

The current product range is including the following product versions: RESTUBE basic, classic, swim, sports, PFD and lifeguard (RESTUBE 2019). Customer can choose a suitable Restube, depending on their particular water sport. The starter product is the RESTUBE basic, which is suitable for activities on and in water and offers no additional extras. The starting price is € 59.95. The next model in the RESTUBE range is the RESTUBE classic at a price of € 74.95. It is also suitable for activities on and in the water, can be worn both horizontally and vertically and has an integrated key compartment and a whistle as additional extras. The RESTUBE swim, which was awarded with the ISPO Gold Award 2016/17 in the category action (ISPO 2016), is the next step in the variety of products and with just 210g the lightest RESTUBE. With its compact dimensions of only 12x6x4cm and its light weight, it is designed to the needs of swimmers. The RESTUBE sports was the first RESTUBE product to be developed and serves the basis for the other products, but however began life without a split. Unlike other RESTUBEs, the special split-system prevents the buoy from unintentional inflating in high-tides or other extreme conditions and is suitable for all extreme water sports, from kitesurfing to windsurfing or kayaking. It can be attached to the harness and is available at a price of € 99.95. The RESTUBE PFD (personal flotation device) was developed with the help of the German Accelerator Program for the US-market (see chapter 5.3) and released in 2018. It is the smallest certified PFD on the market.

In addition to water sports and other water activities, RESTUBE also focuses on sea and water rescue and has developed the RESTUBE lifeguard (Schweiger 2016) in close cooperation with the SLRG, lifeguards of the Royal National Lifeboat Institution, German lifeguards and the German Wasserwacht. It is a professional rescue tool that complements traditional life-saving equipment and can be easily worn around the waist like the other RESTUBE products. In contrast to the other versions, it is designed for rescue and specially adapted to the needs of lifeguards and lifeboat crews. Thanks to two kinks in the buoy, the Restube can be placed around the casualty's body and secured with carabiners using four eyelets. A 1.9 meter long safety leash with a quick-release buckle for dangerous situations as well as reflector strips for better visibility in the dark provide increased improved safety for the rescuers.



Figure 2: RESTUBE Lifeguard (RESTUBE 2019)

Another disruptive product has been released in 2018, which is also especially designed for sea and water rescue: the RESTUBE automatic. It is attached to a drone, is dropped over the person in trouble in the water and automatically triggers when it comes in contact with water, so that the person can hold on to it until help arrives (Schneider 2018). In 2008, Christopher Fuhrhop developed the idea of using drones for sea and water rescue as part of a student research project at Karlsruhe Institute of Technology. A prototype was built and now ten years later with the help of advanced technologies, the idea is being implemented (Westphal 2017). The drones enable rescuer to reach the scene faster than it would be possible on the conventional way with a boat.

1.2 History

The conceptual idea behind RESTUBE originates from Christopher Fuhrhop finding himself in a life-threatening situation while kitesurfing on the open sea (Stenftenagel 2017). Shocked by this incident, he realized when talking to others that many people had been in similar situations, but had not talked about it (Fuhrhop 2018). Protection vests or life jackets were obviously already on the market at this time, but they wouldn't have been helpful to him in this specific situation. Back at university, he took the opportunity to attend a seminar at the Center for Interdisciplinary Entrepreneurship (CIE), where he further developed the original idea together with a friend. During the whole seminar Mo Meidar, the former owner of MAG IAS which is one of the world's largest machine tool companies, acted as a personal mentor. Thanks to his supervision, they were able to learn basic skills about business planning and storytelling. Additionally, the university funded a detailed market research by which they were able to confirm their presumptions. All in all, this provided the basis for founding RESTUBE together with his fellow student Marius Kunkis as well as applying for the EXIST start-up scholarship (Schweiger 2016).

Parallel to attending the workshops, Christopher Fuhrhop was doing an internship at Flysurfer, a kite and paragliding company from Marquartstein, Germany. Having access to products, materials and market insights, he had the opportunity to build an initial prototype during his diploma thesis. At the same time, Marius Kunkis focused on their idea in his diploma thesis and received support from the Institute for Product Development (IPEK). At the moment the two founders were awarded with the EXIST start-up grant, the following step was to buy a production machine. Even if it meant considerably more work, it was from their point of view essential to avoid possibly being dependent on a single producer (Fuhrhop 2018). While the initial prototype was constructed by using a friend's old sewing machine they were able to develop further prototypes themselves. By doing so they could acquire deep knowledge which was invaluable for future negotiations with suppliers and producers.

The vision of both entrepreneurs was to scale RESTUBE rapidly and "conquer the world" right from the start (Fuhrhop 2018). In this context, external financing played an important role and company growth without venture capital could not have been realized. Overall due to six investment rounds and two crowdfunding campaigns on Seedmatch and Kickstarter a total number of 3.6 million Euros were collected (Stenftenagel 2017, Schweiger 2016). RESTUBE raised considerable attention, and not only from the investors. Over the years, they were honoured with various awards, including the prestigious German Founder Award 2015 (Deutscher Gründerpreis 2015), the 2015 Outdoor Industry Award (Outdoor Magazin 2015) as well as the ISPO Gold Award 2014/15 and 2016/17 (ISPO 2016). A three-month coaching from Porsche Consulting in the form of weekly visits and assistance in the

implementation of specific topics was made possible after winning the German Founders' Prize. Thanks to this support, the team was able to develop the sales topic with the appropriate sales funnel, implement the LEAN theory to the RESTUBE production and establish the important topic of corporate identity (CI) for RESTUBE. The development of the CI, the cultural identity of the company, was an important step for RESTUBE to capture their vision, create a culture and make it transparent to those outside of the company, whether for new employees, partners, distributors or for the customer. Instead of creating negative communication and focusing on the danger of drowning, the team has chosen positive communication in order to build up the story behind RESTUBE. However, in addition to the time and the challenge involved in the finance negotiations, there was also a structural change in the years following the Founder's Award, as co-founder Marius Kunkis decided to leave the RESTUBE project for personal reasons. The collaboration on the management level between him and Christopher Fuhrhop was not always harmonious, resulting in Fuhrhop being the sole owner of the business since then.

Due to new investments and a successful seed match campaign, the company and the team grew. The target group was extended to the field of sea and water rescue when the RESTUBE lifeguard for professional use was developed. In early 2016, RESTUBE was selected for the German Accelerator Program, a funding program funded primarily by the Federal Ministry of Economics and Technology. It allows founders to work for some time in the US to develop and access the American market. At that time, the stand-up paddling sport was becoming more popular in the US, which is why the government decided to make a life jacket of some kind obligatory. The lifejacket does not have to be worn, but can be attached to the board - at this point Fuhrhop and his team grasped the opportunity and developed the RESTUBE PFD (Personal Flotation Device). With the support of those involved in the German Accelerator Program, a Kickstarter campaign was launched to access the American market. However, only half of the supporters on Kickstarter decided to buy the PFD, the other half bought the standard RESTUBE swim. The campaign did not expand as hoped and sales in the US market fell short of expectations. These and other problems (see Chapter 7) led to a profound restructuring of the company and a reduction in the number of employees in early 2017 to a smaller core team of seven members. From now on, the focus was set on sales in the form of marketing and distribution rather than innovation. As a consequently step, the logistics was outsourced to the cooperation partner *fashy* in order to be able to concentrate again on their key activities again.

1.3 Structure

RESTUBE currently employs six employees besides the founder and managing director Christopher Fuhrhop and has three core areas: sales, marketing and operations (see figure 3). This functional structure makes it possible to work in a compact team with a clear distribution of tasks and it is planned not to exceed a maximum number of twelve to fifteen employees in the future (see Chapter 7.1). This small size means there are no levels of hierarchy, so each employee has their own individual function and role, and the tasks are self-governing without any need for the founder to intervene.

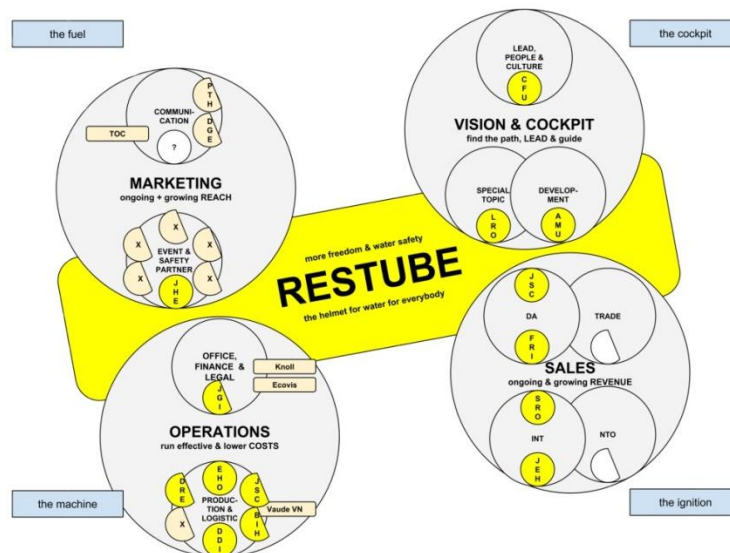


Figure 3: RESTUBE organigram: date (RESTUBE 2019)

2. Market

One of the six dimensions of an entrepreneurial ecosystem according to Isenberg (2010) is the business environment in which the company operates. It significantly influences the development process and contributes to the growth of the company. In the following subchapters, the relevant factors that affect this dimension and thus created the basis for the RESTUBE idea are discussed in detail.

2.1 Target customer

Due to the universal applicability of the product in all water sports, there exists a high number of potential customers as well as various types of use: surfers, kitesurfers, windsurfers, swimmers, stand-up paddlers, outdoor enthusiasts of all kinds, boaters, canoeists or rowers, anglers, lifeguards etc. RESTUBE was developed with these different customers in mind and offers a wide product range especially for these different interests.

There are around about a billion water sports enthusiasts worldwide and more than 100 million active people doing open water activities (Schweiger 2016). Combined with professional water rescue, this results in a market that is significantly larger than the market for classic lifejackets.

2.2 Channel of distribution

In contrast to the recommendations to focus initially on one country or on the domestic market in Germany, the founders decided to have a deliberate wide diversification. A network of national and international distribution partners was established through personal contacts at trade fairs with dealers and distributors representing different channels of the sports industry (such as the mountain sports world) or the mass market (such as BAUHAUS). In addition to brick-and-mortar retailing, the products are also distributed directly via the company's own online shop to the end customer in Europe as well as to organizations for professional use. Due to the winter months in Europe being water sports-

free, marketing was not only concentrated on Germany and the EU, but also all other potential countries were taken into. In addition to Germany, which serves as a test market and where RESTUBE is developing its own distribution, a distribution network has been established with partners in more than 20 countries from Mexico to Japan. Each of these partners or partner companies was individually selected, briefed and regularly provided with sales knowledge and product news in order to spread the RESTUBE vision abroad.

In addition to the distributors, regular attendance at trade fairs and water sports events within the scope of safety aspects is essential to increase awareness. In order to increase safety at water sport events, wearing a Restube is obligatory for all participants. Potential customers are able to experience the product first-hand and can purchase it after the event. In addition, RESTUBE is in regular dialogue with professional opinion leaders, such as Janni Hönscheid or the Stecher-twins, and provides its dealers with the support they need to be able to tell the story behind the products and establish RESTUBE.

2.3 Competitors / Competition

Lifejackets, swimming wings and pool noodles already existed at the time of founding of RESTUBE, but no product comparable to the Restube. Initially, the Restube did not meet the existing norms and certifications, which meant that the founders faced scepticism from some lifejacket manufacturers, who were convinced that, without a license, the idea was doomed to fail. As a result, a potential major competitor decided not to enter the market. The founders of RESTUBE were told by the German and American certification authorities, that a standard could be written for the product in cooperation when the sales volume reached one million Restubes. Other countries are adopting the high standards from Germany and the US, so this shouldn't cause a problem in the future. The founders did not allow themselves to be discouraged by the lack of certification and continued to work on their product.

In 2015, Kingii was the first competitor on the market to offer a similar product. A significant difference was that they decided to use a wristband to attach the system. Similar to RESTUBE, Kingii launched a crowdfunding campaign in order to be able to enter the market. However, the product did not work flawlessly which resulted in bad scores ratings on the internet. In the recent years there has been little news about the rival company.

A German company called PLOOTA attempted to launch a security system in 2017, by trying to gain support from a Kickstarter campaign. The PLOOTA safety system was designed to be worn around the neck and triggered by sensors when the bather or the swimmer is in distress. However, in June 2017, before the campaign had ended, the company terminated it prematurely. The reason was that they had received considerable feedback and had decided to "to add additional features to the PLOOTA and create the ultimate safety device for swimmers" (PLOOTA 2017). In early 2018, the PLOOTA founder offered Christopher Fuhrhop his company for sale.

Although both competitors did not manage to enter the market, they attracted a great deal of attention in the field of water safety, just like the classic buoys, which have long been used in swimming competitions. RESTUBE is benefiting from this attention, which their competitors created.

2.4 Cooperation partners

Right from the start, RESTUBE focused on cooperation: with athletes, associations or event organizers. Due to this commitment, RESTUBE is the safety supplier or safety partner for several prominent events in the swimming, kitesurfing and triathlon scene, as well as being partner of the Swiss Life Saving Society and receiving support from the top wave surfer Sebastian Steudtner and the surfing world stars Janni and Sonni Hönscheid. As far as the production of the Restubes is concerned, the company has cooperated with VAUDE, a well-known mountain sports equipment supplier, since the beginning. Based on the support of Albrecht von Dewitz, the founder of VAUDE, the RESTUBEs bags are produced in the VAUDE production in Vietnam.

In 2018, further collaboration with fifteen brands is planned, including the largest lifejacket manufacturer in Europe. Each Restube can be attached via an interface, a small patch to the collaborating companies' products. At the time of purchase, this patch has a hang tag with the story of RESTUBE, so that the buyer can directly understand the story and idea behind RESTUBE. These cooperation partners open up new possibilities for RESTUBE and should contribute to the popularity of the brand.

3. Founder and team

The dimension "human capital" according to the entrepreneurship ecosystem approach from Isenberg (2010) is divided into two topics: Founder and team. Isenberg (2010) focuses in this dimension of his model on the quality of education and degrees as well as entrepreneurship training. These aspects only play a secondary role in this case study and are dealt with in a slightly modified form in Chapter 5.

3.1 Number of employees

Following the award of the EXIST start-up scholarship, the number of employees in the RESTUBE team rose from one to four. In the following years, it developed to such an extent that at the peak, after the fourth bout of finance negotiations, up to 25 people worked for RESTUBE, including student assistants and trainees. The next step was the introduction of a second level of management to relieve Christopher Fuhrhop and create shorter communication channels. The two largest divisions, Marketing / Sales and Operations, were each given a head of department. These persons received more responsibility and a regular daily contact with Fuhrhop was set up to ensure he was kept informed. However, the introduction of this first level of hierarchy was more problematic than expected, resulting in a certain level of dissatisfaction within the company.

As a result of this experience and restructuring in 2017, the team was reduced to a core of seven people, which is expected to grow to a maximum of 12 employees in the near future. It is planned to ensure that the RESTUBE team remains compact with a simple structure. This seems to be necessary in order to remain capable of acting and not to lose motivation, as has happened in the past.

3.2 Expectations and motivation

Due to the diverse target group, it was already obvious very early on that focusing on a niche would not be the right method and not consistent with the long term vision to create and

offer an “affordable helmet of water sports”. However, guiding theme meant the young and inexperienced team were faced with some major challenges. Although when RESTUBE was founded lifejackets, water wings and pool noodles already existed. However, no similar product to Restube was sold and therefore no-one had in-depth knowledge about this particular market.

By remaining a small team, the demands on the new employees changed. In the beginning, the founders were looking for employees who were able to work specifically in their area. At that time there was no focus on extensive integration. However the small size of the team meant that there was increased willingness and motivation to keep track but also to pay attention to the details. This also demanded a high degree of flexibility as the employees could also be required to work in other areas, for example in production - when help is needed.

In order to facilitate the integration into the core team, new employees must receive extensive training and the expectations must be clearly communicated. This is essential to prevent tasks from being done differently than expected. From the founder's point of view, transparency also plays an important role in this context. In order to keep track and identify errors or problems at an early stage, it is important for the management to be well-informed. In addition to the demands on new team members, working at RESTUBE offers many opportunities and chances for development. There are regular opportunities for this in the form of coaching, workshops or classical further education in sales topics. Employees should not only be motivated, but also be able to develop personally in order to support and strengthen the company and its culture (Cyberforum 2014).

3.3 Role of the founder

However, in addition to flexibility and simplicity, a small team means that not all roles and tasks can be distributed and that some tasks are not dealt with in sufficient detail because there are simply not enough employees. RESTUBE founder Christopher Fuhrhop sees his role in integrating these tasks and dealing with exactly these gaps, which otherwise would not been filled. He therefore works on tasks that are necessary and also of great importance to the company, such as the preparation of reports and communication with investors. His aim is to create a framework in which every employee is as happy as possible and can concentrate on the tasks that match their skills.

In the early days of RESTUBE, the founder also had to take on all the tasks, but over time Christopher Fuhrhop was able to continue to withdraw from specific areas and concentrate on other topics. As mentioned above, he now takes on tasks that are important to the whole business and focuses on the development of the company.

3.4 Mentality of the founder

Christopher Fuhrhop is not the only entrepreneur within his family. His brother Sylvester Fuhrhop is part of founding team of the university spin-off Corvolution, an innovative medtech start-up in cardiovascular prevention and diagnostics (Corvolution 2019). Their parents, grandparents and other relatives of the family created companies with 50 up to 1000 employees, which had a major influence on the decision of the two brothers to start their own businesses likewise (Fuhrhop 2018).

Even before the founding of RESTUBE, Christopher Fuhrhop worked on the organization and execution of own projects, whether as a lead singer of the New Metal band “Wirksystem” (Stenftenagel 2017), where he took over the booking and organization of a US tour, or as the organizer of a festival with over two thousand guests (Fuhrhop 2018). In his own words, he has always enjoyed implementing projects that others thought were not feasible. In the beginning, the founders had the feeling that that prominent life jacket manufacturers bet against the RESTUBE project because in their opinion the product would not receive the necessary approval. Nevertheless, he remained believing in his vision and fulfilled every task as long as it served the further development of the enterprise. His original goal of creating something sustainable and enduring has already been achieved with RESTUBE, despite many doubting it.

4. Culture

The image and the perception of the company is particularly important for the young RESTUBE company, in order to gain support for their vision and to develop a “helmet of water sports” that is affordable for everyone. As a safety supplier for top events in the kitesurfing, swimming and triathlon scene as well as through cooperation partners and the support of numerous water sports stars, the company has been able to build up a reputation in the scene. Along the way, numerous stories about lives saved by Restube buoys have enabled the company to develop a detailed corporate identity and win numerous awards (Deutscher Gründerpreis 2015, ISCO 2016).

4.1 Corporate Identity

Winning the German Founder Award meant the company was given three months support from Porsche Consulting (Deutscher Gründerpreis 2015), which helped to develop the corporate and cultural identity of the company (Fuhrhop 2018). This was an important step for RESTUBE in the direction of realizing their vision and the creation of a story behind the company. With the help of the written CI, the mutually-agreed goals for employees, partners and even new customers could be made transparent and understandable.

The most important aspect of the CI is the positive emotional branding and communication, which was decided by the team. Even though it was incomprehensible to many at the beginning, they opted for the supposedly more challenging way forward. Since the products are not life-jackets, they were not allowed to communicate for legal reasons that a Restube could save the life of the wearer. This fact also helped to keep the style of communication positive. They consciously wanted to emphasize the idea of security, as well as the freedom in the water instead of the theme of rescue, in order to initiate positive communication in all channels. All of these steps and decisions were not only designed to put products on the market, but also to build a brand around the RESTUBE Company and make them known.

4.2 Awards and appreciation

At the time of its founding and initial search for suitable producers and partners, recognition and respect from other companies played an important for the team members and their idea. The production machine, bought with the financial support of the EXIST start-up scholarship, meant that the first 5,000 Restubes could be manufactured by the team. Out of it, the founders could gain important knowledge about the production and its challenges. As

a result, they were able to carry out their own production optimization and enter into cooperation negotiations with concrete ideas, which earned them the respect of their partners for the RESTUBE sports.

Not only partners and water sports enthusiasts could be convinced by RESTUBE. The appreciation of various juries was immense since the company's foundation. Christopher Fuhrhop and the RESTUBE team have received many awards for the idea and their products: among others: the ISPO Gold Award for the RESTUBE sports in 2014/15, the German Founder Award in 2015, the most important award for young companies, as well as the Outdoor Industry Award for the RESTUBE lifeguard as an innovative product for outdoor rescue also in 2015 and the ISPO Gold Award 2016/2017 for the RESTUBE swim.

While these awards and prizes did not have a financial impact, they provided better recognition within society, the region, as well as with partners and suppliers. Although RESTUBE already had a certain media presence before the awards, renowned events such as the German Founders' Prize or the ISPO Awards lead to a broad reach and a media interest, attracting not only new customers, but also potential investors.

5. Policy and support

Based on its clear ambition for growth and vision of developing a "helmet of water sports" affordable for everyone, the team initially needed a lot of support to master the new challenges. The team received this support from all directions: from the lecturers and supervisors at KIT, the government in the form of the EXIST start-up scholarship, the German Accelerator Program and their investors in the form of direct contacts and networks. Besides that, the entrepreneurial ecosystem of Karlsruhe with its growing start-up community has a major influence on the local entrepreneurial activity, especially in technology-based entrepreneurship (Henn and Terzidis 2019). This leads to a culture from which new businesses can benefit enormously and success stories were created.

5.1 Support by the university

The first steps towards founding the company were taken during a seminar at the CIE, which Christopher Fuhrhop and Marius Kunkis participated during their studies. Due to professional mentoring from Mo Meidar, they had the opportunity to work on their ideas and develop them further. This support as well as a market research, financed by a department of their university, formed the basis for the founding of RESTUBE and the application for the EXIST Start-up Scholarship.

After successfully completing the seminar, both Christopher Fuhrhop and Marius Kunkis continued to work on their ideas during their diploma theses. Thanks to the support of the supervisors Prof. Dr.-Ing. Jürgen Fleischer (WBK) and Prof. Dr.-Ing. Albert Albers (IPEK) as well as the Research Center for Computer Science (FZI) at the KIT, the founders could use their mandatory academic studies to further develop on their ideas and to test them as well.

5.2 EXIST start-up scholarship

The EXIST start-up scholarship is a funding program of the German Federal Ministry of Economics and Energy and supports young founders of universities or non-university research institutions who want to realize their ideas and implement a business plan (Kulicke

2017). The focus of this funding lies on innovative technology-oriented ideas, as well as innovative knowledge-based services with positive economic prospects for success. The support provided by the scholarship is designed to last a maximum of one year and is primarily a guarantee of personal livelihood. The amount of the subsidy varies depending on the educational attainment of the beneficiary.

The EXIST start-up scholarship was an important support for the RESTUBE team, because they could then buy their own production machine and therefore build further prototypes and produce the first 5,000 pieces themselves. The experience gained from this production setup and the production optimization enabled them to avoid dependencies on suppliers and acquire practical knowledge.

5.3 German Accelerator Program

At the beginning of 2016, RESTUBE was selected for the German Accelerator Program, a growth acceleration program funded primarily by the German Federal Ministry of Economics and Technology and supporting founders planning to enter the US market (Kyriasoglou 2016). The start-ups selected by the program are supported during a three-month stay in the US to establish themselves sustainably and successfully in the US and world markets (German Accelerator 2019).

The three months are characterized by reflection and optimization as well as mentoring and coaching on a variety of topics: from financing to marketing, to communication strategies and rhetoric training. With the support of the team of the German Accelerator Program, a Kickstarter Campaign was launched to develop the American market (Fuhrhop 2017). The RESTUBE PFD, a small and lightweight swim vest, was especially designed to be launched in the fast-growing stand-up paddling market, as it became compulsory to carry a life jacket.

5.4 Networks

Special founder meetings or networks played only a minor role for RESTUBE in the start-up phase. Due to the very special product and the combination of various target groups, there was no-one who could help the founders with their product queries. Accordingly, it was the task of the founders and their team to experiment and thus gain some important experience. However, the founders' networks were helpful for the business component. Furthermore, the investors and their business contacts were always available to offer new impulses to them and to optimize the company processes.

6. Funding

Growth, especially in total sales numbers, should be an important goal for the majority of young companies and start-ups (Kollmann et al. 2016). The founding team of RESTUBE decided early on that they did not want to build and grow their business slowly, step by step, but rather progress quickly. An important component of this growth was and still is the external financing by investors and crowdfunding campaigns.

In a total of six bouts of financing negotiations, which were primarily aimed at investors, RESTUBE collected a total of 3.6 million EUR. Over time, the company has been able to convince renowned investors, such as Prof. Susanne Porsche as well as Manuel Blanc and Frank Straub (BLANC & FISCHER Family Holding) as private persons. Each of the investors has

made the individual growth stages possible and continues until today to support the team with their expertise and professional network.

In 2018 a new investor has become aware of RESTUBE and has made far-reaching changes in the circle of investors. Nathalie Pohl, daughter of DVAG-CEO Andreas Pohl, has joined the RESTUBE with a high growth invest of 25 percent (Hornung 2018). She will be an important strategic partner with strong connection to water activities and the water sport community. This will help in the long term with new financial resources and great interest, to expand the vision and upscale RESTUBE. As a result, three existing investor groups have been replaced, so that in the future only four investor groups will influence and support the company.

However, due to the special product and a special market, confidence in the RESTUBE team prevails within the circle of investors, leading to little operational influence. Once a month, investors are informed through a comprehensive report on current events and figures and are otherwise available for questions and support.

In order to gather support from water sports enthusiasts and to open up the mass market, a crowdfunding project was launched in the middle of 2016 in the form of a Seedmatch campaign in which 600,000 EUR were collected from 640 supporters (Schweiger 2016). To test run and validate a new product in the US, there was also a Kickstarter campaign, launched at the end of 2016 (Fuhrhop 2017). As part of this campaign, 20,529 EUR were collected with 211 supporters, but interest in the RESTUBE PFD was lower than expected, so it has not advanced further than this test run.

7. Problems and crises

According to Greiner (1998), problems and crises are mainly due to the fact that every growth over time necessitates adaptations of processes, structures and functions to the new size. RESTUBE, too, has faced some problems and challenges in the growth process since its founding, which are explained in the following subchapter.

7.1 Founder team and employees

As already established by Volkmann and Tokarski (2006), the founding team of a company is a decisive factor for the success or failure of a young company. Four years after its foundation, RESTUBE faced critical challenges concerning the work balance between the two founders Christopher Fuhrhop and Marius Kunkis and a clear distribution of roles among each other. After intensive personal discussions Marius Kunkis decided to leave the company on good terms. Christopher Fuhrhop took over the management on sole responsibility and has remained in this position as the CEO until today.

It is natural in a growth process that even within a team, small stumbling blocks may be encountered (Janz 2014). A real crisis occurred within the RESTUBE team when in 2015, in the period just before the German Founder Award, customers did not pay for their goods. There was a lack of funding and the situation became existentially threatening for the company.

After the restructuring worked out and the economic situation improved again, in addition a successful Seedmatch campaign was implemented. New employees were hired, and the team grew again. The logical consequence was the introduction of an intermediate level in the hierarchy.

Pretty much right after the team structure was finalized a second big crisis came up in spring 2016, when one of the employees died in a car accident. Directly after funding, the team had to move closer together to handle the beginning of the new season and overcome the crisis. The total numbers in sales were still growing, but slower than expected. In this dramatic situation which nobody, even in the experienced shareholder circle, had experienced before, RESTUBE faced a real thread. Coming out of a seeming "perfect setup" after the Seedmatch funding and the built up team. However, the crisis was recognised as an opportunity for a profound change. By major restructuring measures in 2017, a downsizing to a core team of currently seven persons was indispensable.

7.2 Focus

Another problem, according to Fuhrhop, was the evaluation, reflection and implementation of test results in order to find the focus for the company. Although outsiders advised them to be focused right from the beginning, it was important for the team from the start to spread their efforts so as to gain an overview of the opportunities. As a result, business contacts could be set up and established where there was real interest, regardless of whether they were cooperation partners, distributors or investors. In his opinion, however, although the team tried and learned due to the wide focus, there was also little opportunity for reflection which led to a deficient test framework. They were therefore not able to implement any knowledge gained about which channels perform well and to reflect on how they can use it to reach their goals. As a result, the learning process from the experience already gained is still lacking.

Especially in the initial years, many areas and tasks needed the team's closer attention. According to Fuhrhop (2018), these years can be compared to "a tray with balls and no rim". All the "balls" need attention, and if you have to deal with one ball more intensely, another ball is in danger of falling off. In the history of RESTUBE, the first phase was focused on the development, which in the next step turned into sales, so that the development became only secondary and clearly limited. When first partners and distributors were found, attention shifted towards the marketing to increase awareness and attract customer attention. The next step is the scaling up of the production to one million pieces a year, so that the topic of operations comes into focus once more and consequently all other areas shift out of focus. According to Christopher Fuhrhop, a reason for this focus shift was the small number of employees, because it was not possible to work on the different areas at the same time. This led to situations where many areas demanded attention as well as liquidity problems and employee issues also arising.

However, according to the founder, RESTUBE learned from these challenges and focused on its own strengths: product and communication. A first step in this direction is the planned outsourcing process of the logistics to *fashy*, so that the team can focus more on their product, the market and the resulting strategy issues. The strategy, derived from the RESTUBE vision, is divided into area strategies and a so-called "Fight plan" for each area in order to pursue one's own goals and to monitor their attainment. With the help of this "Fight plan" and the focus on their product, RESTUBE now wants to get a step closer to realizing the company's vision of developing an affordable helmet for the water.

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